Tactical Language and Culture Training System

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USC / ISI

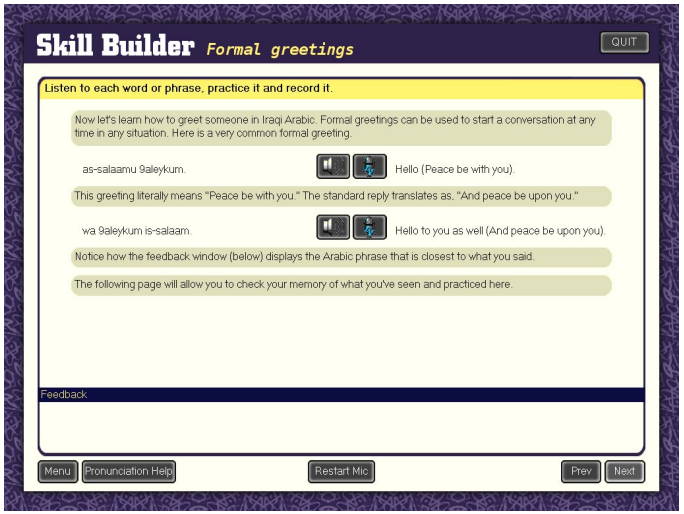
Tactical Language and Culture Training System

Rapid training in foreign language and culture

- Focus on spoken communication
- Focus on particular tasks

A combination of gaming and intelligent tutoring

- Mission Game
- Arcade Game
- Skill Builder


Skill Builder
Formal greetings
QUIT
Listen to each word or phrase, practice it and record it.
Now let's learn how to greet someone in Iraqi Arabic. Formal greetings can be used to start a conversation at any time in any situation. Here is a very common formal greeting.
as-salaamu 9aleykum.
Hello (Peace be with you).
This greeting literally means "Peace be with you." The standard reply translates as, "And peace be upon you."
wa 9aleykum is-salaam.
Hello to you as well (And peace be upon you).
Notice how the feedback window (below) displays the Arabic phrase that is closest to what you said.
The following page will allow you to check your memory of what you've seen and practiced here.
Feedback
Menu
Pronunciation Help
Restart Mic
Prev
Next

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Game Views

Mission Game

Arcade Game

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Technical Approach

We employ a unique combination of technologies:

- Serious games
- Interactive learning environments
- Speech recognition
- Artificial intelligence for interactive dialog and animation control
- Learner modeling and assessment

We develop and combine these technologies, exploiting synergies

We develop data representations and authoring tools to facilitate content creation, reduce production costs

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Tactical Language Courses

Tactical Levantine (initial prototype)

Tactical Iraqi (in use)

- Army, Marines, civilian versions

Tactical Pashto (to be released next week)

- Army, Marines, Canadian version

Tactical French (under development)

- Military version for Sub-Saharan Africa

Mission to France (under development)

- Civilian version (for Provence)

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History

April 2003: project began at USC; team assembled

Oct. 2003: 1st Levantine Arabic prototype delivered to USMA

April 2004: USSOCOM signed on as co-sponsor

Nov. 2004: Work on Tactical Iraqi began

Jan 2005: First alpha test version, train-the-trainer course

May 2005: Tactical Language Training LLC begins operations

July 2005: 1st complete beta version of Tactical Iraqi delivered to USMC I MEF

August 2005: co-winner of DARPATech Significant Technical Achievement Award

August 2006: First commercial-grade version of Tactical Iraqi released

December 2006: Beta version of Tactical Pashto released

January 2007: Dept. of Commerce approves for foreign sales

March 2007: over 2000 copies distributed, over 6000 trained so far

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Current Distribution

Who and Where	Comments
USSOCOM	800 copies, 80 computers, distributed to SOF Command Language Program Managers
Expeditionary Warfare School, Quantico, VA	Required training for all students
25th ID, Schofield Barracks	Full training lab installed March 2006
MCAGCC 29 Palms	50+ systems, in regular use, > 600 trainees so far
II MEF, Camp Lejeune	4 installed training labs
10th Mountain Div. in Afghanistan	HQ took beta Pashto with them in March 2006
1st ID, Ft Riley	240-computer training lab, ~2600 trainees so far
CGSC Fort Leavenworth	In use at Digital Training Center and in Staff College Iraqi course
1 MEF, Camp Pendleton	22 PC training lab installed summer 2005. 100 copies in use in Iraq.
Ft. Stewart	7 training labs (130 installed computers)
Vicenza, Italy	44 computers
Grafenwoehr, Germany	44 computers
National Training Center, Ft Irwin	20 computers, ~2400 trainees planned
Overall: over 2000 copies distributed, 300 downloads / month	

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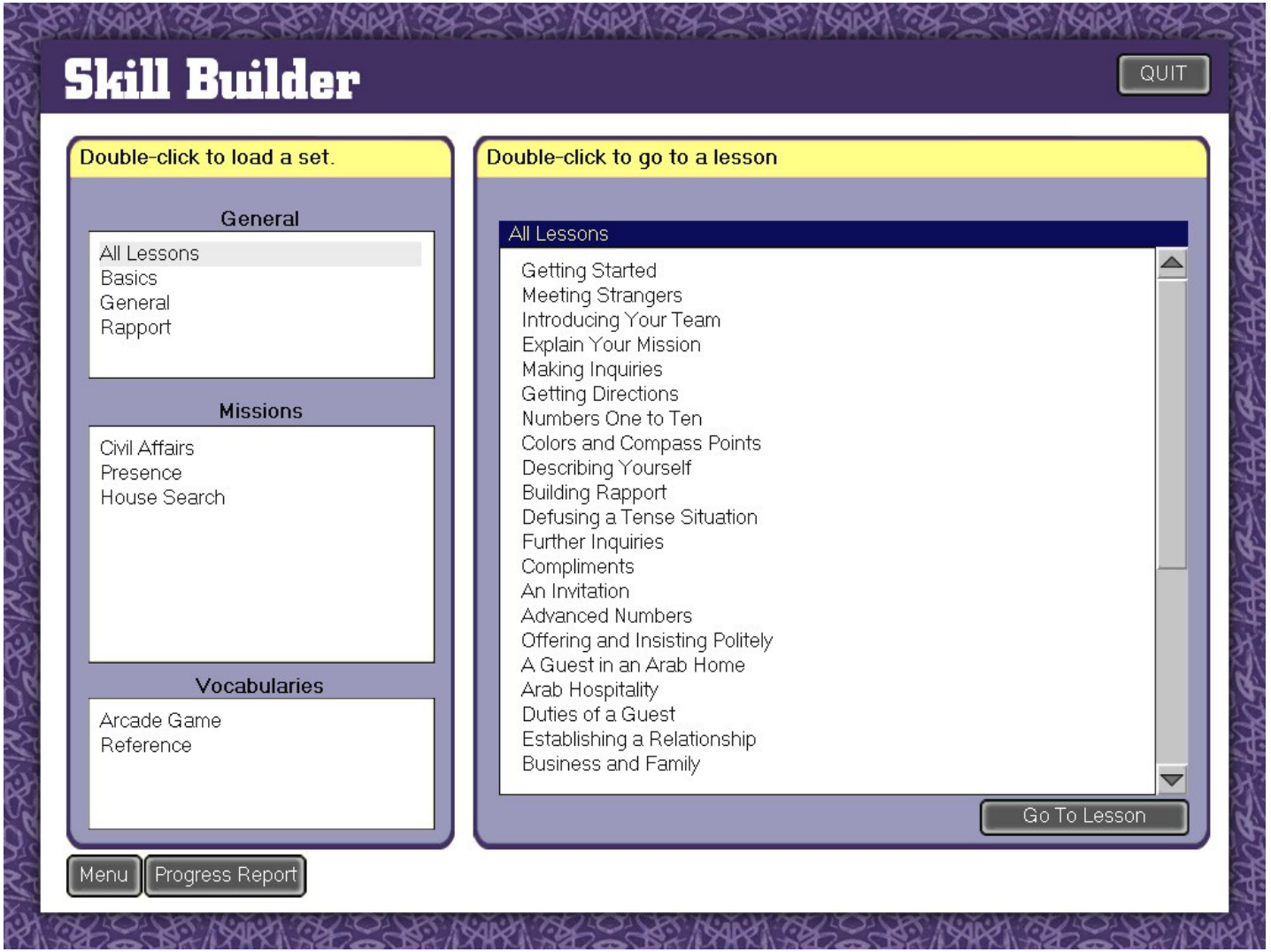
Tactical Iraqi™ Demonstration

Skill Builder



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Two Types of Games

Mission Game

Arcade Game

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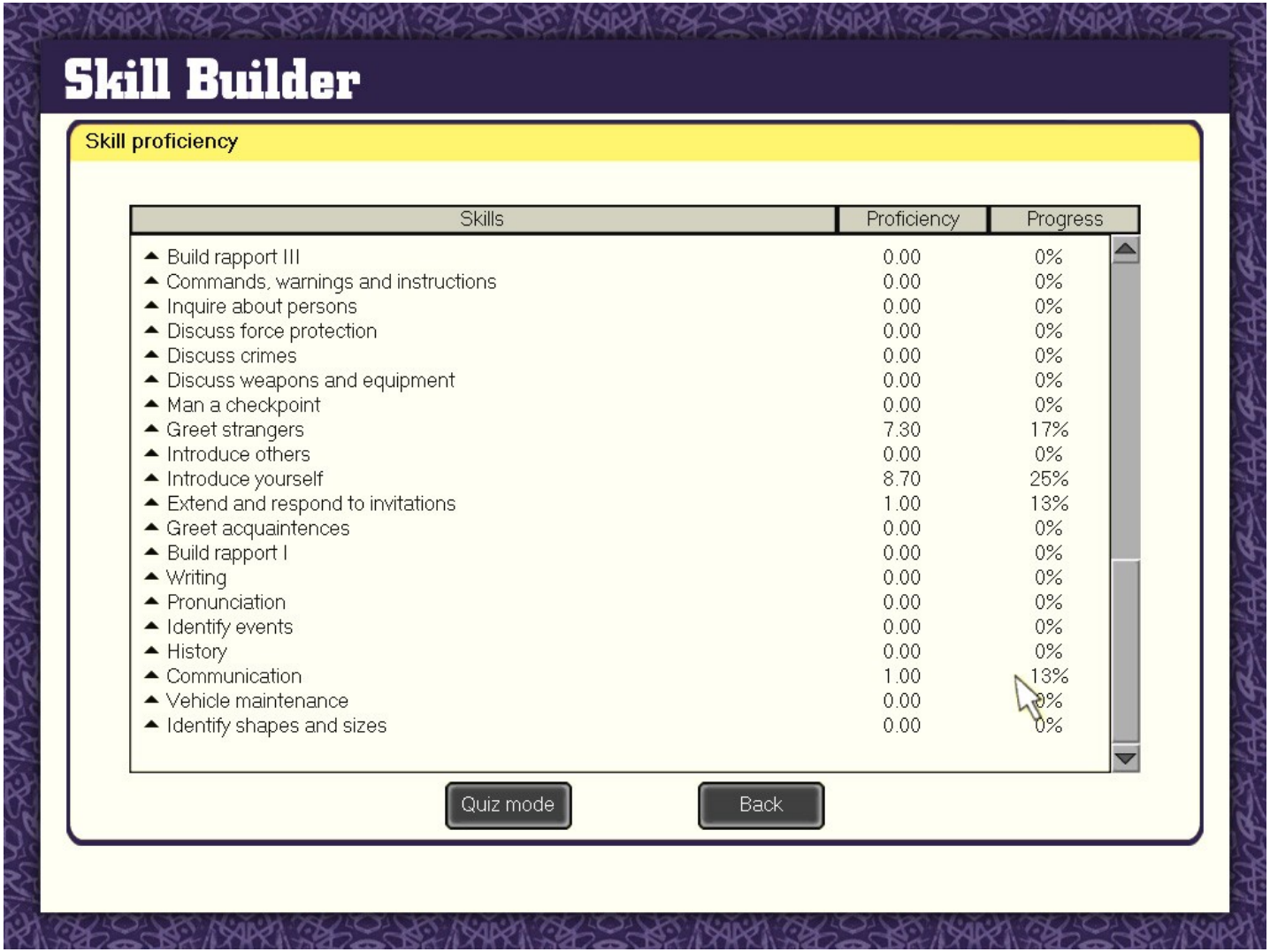
Progress Report



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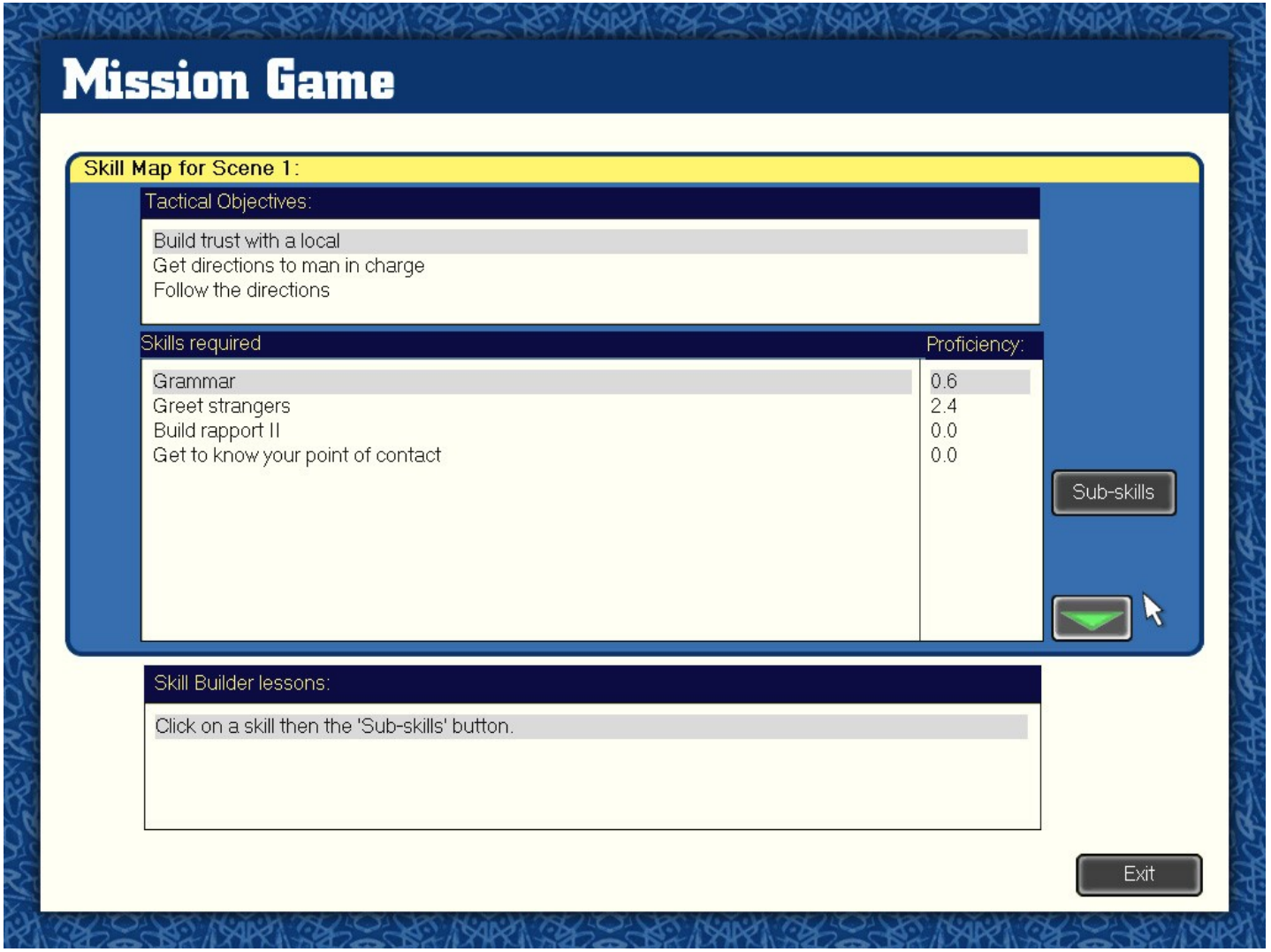
Scene Skill Map



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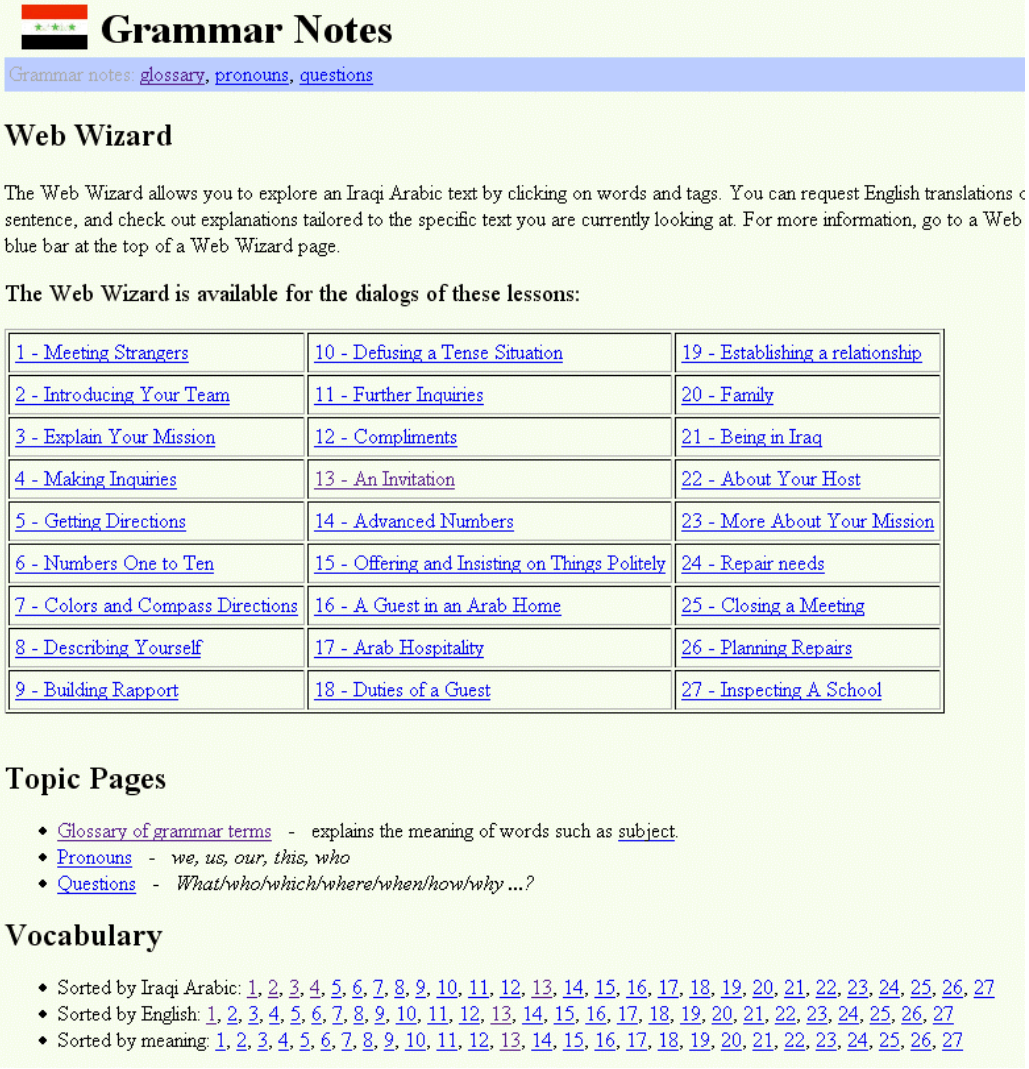
Web Wizard

Tactical LANGUAGE & CULTURE Training System



Grammar Notes

Grammar notes: glossary, pronouns, questions

Web Wizard

The Web Wizard allows you to explore an Iraqi Arabic text by clicking on words and tags. You can request English translations o
sentence, and check out explanations tailored to the specific text you are currently looking at. For more information, go to a Web
blue bar at the top of a Web Wizard page.

The Web Wizard is available for the dialogs of these lessons:

1 - Meeting Strangers	10 - Defusing a Tense Situation	19 - Establishing a relationship
2 - Introducing Your Team	11 - Further Inquiries	20 - Family
3 - Explain Your Mission	12 - Compliments	21 - Being in Iraq
4 - Making Inquiries	13 - An Invitation	22 - About Your Host
5 - Getting Directions	14 - Advanced Numbers	23 - More About Your Mission
6 - Numbers One to Ten	15 - Offering and Insisting on Things Politely	24 - Repair needs
7 - Colors and Compass Directions	16 - A Guest in an Arab Home	25 - Closing a Meeting
8 - Describing Yourself	17 - Arab Hospitality	26 - Planning Repairs
9 - Building Rapport	18 - Duties of a Guest	27 - Inspecting A School

Topic Pages

- Glossary of grammar terms - explains the meaning of words such as subject.
- Pronouns - *we, us, our, this, who*
- Questions - *What/who/which/where/when/how/why ...?*

Vocabulary

- Sorted by Iraqi Arabic: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
- Sorted by English: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
- Sorted by meaning: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27

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Training Manager Dashboard

Capability for managing networked Tactical Language systems

Learner profiles are shared between computers

- Easy transition between networked and standalone use

Instructor can:

- Assign and manage user accounts
- View trainee progress

Provides essential functions, without overhead of maintaining an LMS

Provides a model for integration into LMSs

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Research Questions

The following research questions motivate this work:

- What features of games are most important for promoting learning?
- How do non-game activities change when games are introduced?
- What is the role of groups and communities in promoting training?
- How to promote transfer of game-based learning to the real world?

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Some Quotes

"I learned more in 4 hours than in my entire tour of duty in Iraq" (a Marine 1Sgt)

"I intend to devote a set amount of time per day/week using the software to help me learn Arabic. Having used it at school, I can't wait to delve into it again." (a Marine Captain)

"the SNCOs… perceive that their Marines are acquiring an observable proficiency in the basics of spoken Arabic… most of them appear to be studying it diligently." (a Marine Major)

"a LCpl commented that he learned more in two days with Tactical Iraqi than he did in three years of high school Spanish (a Marine Major)"

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Iterative Design and Evaluation

We conduct extensive formative evaluations

We test new features at partner training sites

We analyze data collected from training sites

This has led to progressive improvements in technology and curricula

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Multilingual Authoring Tools

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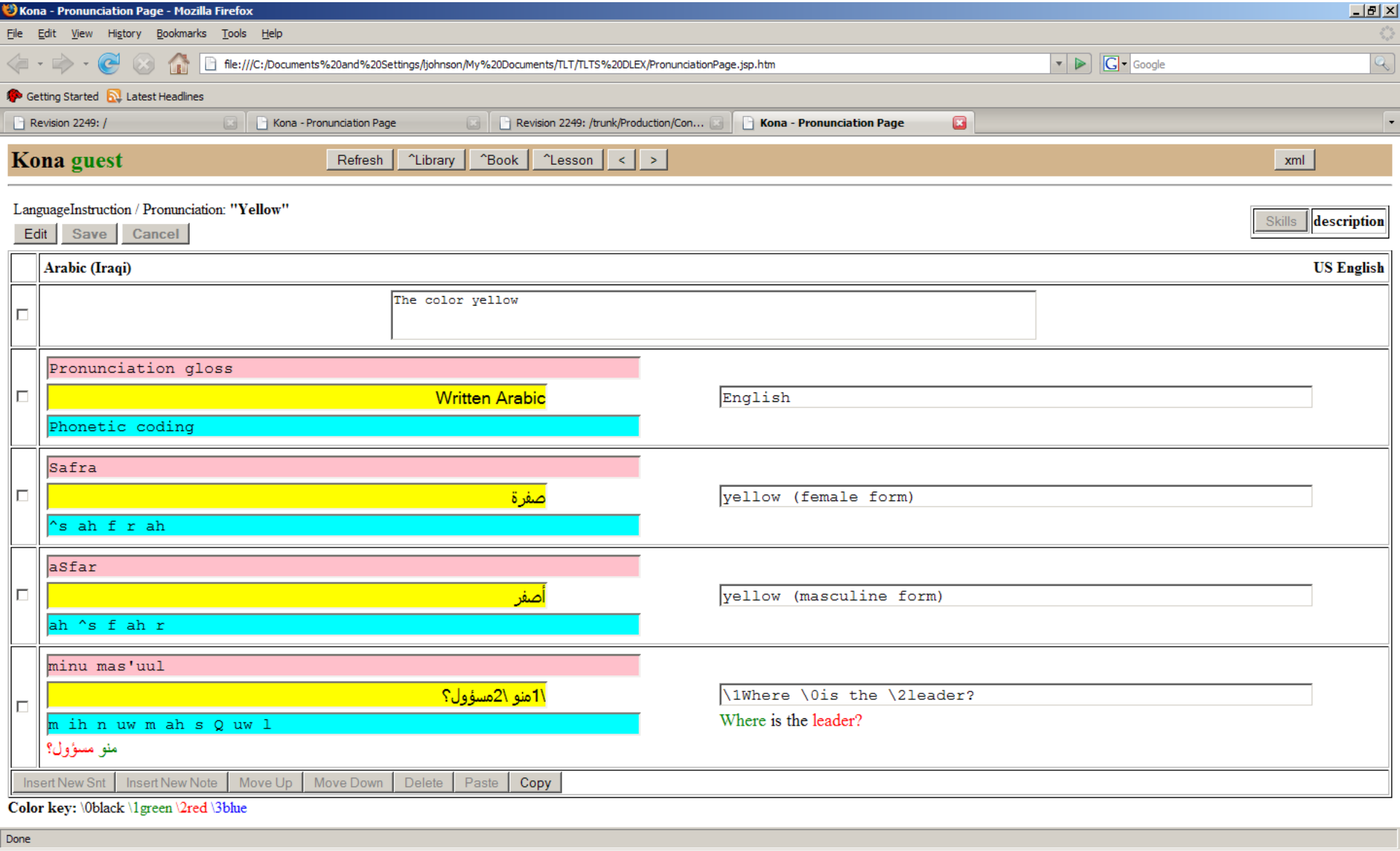

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Promoting Transition

- Train-the-trainer courses
- Tutorials (both inside and outside the software)
- Training procedures
  - Schedules and procedures for trainees
  - Procedures for instructors
  - Requires contributions from both developers and users
- Additional training resources and libraries
  - Manuals, paper-based resources, Web-based resources, portable devices
    - Generated from the same underlying content
    - Retargetable to new languages and versions
  - Reachback to remote instructors
- Integration with other courseware and LMSs
- Integration into broader curriculum incl. written language
- Evaluations of training effectiveness

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Example: Ft. Bragg Experiment

	Mission Game	No Mission Game
SB: Feed back	Students here receive the complete TLTS	Students work only with the Skill Builder, with feedback
SB: No Feed back	Students work with the Skill Builder and Mission Game but no pronunciation feedback	Students work just with Skill Builder, no pronunciation feedback

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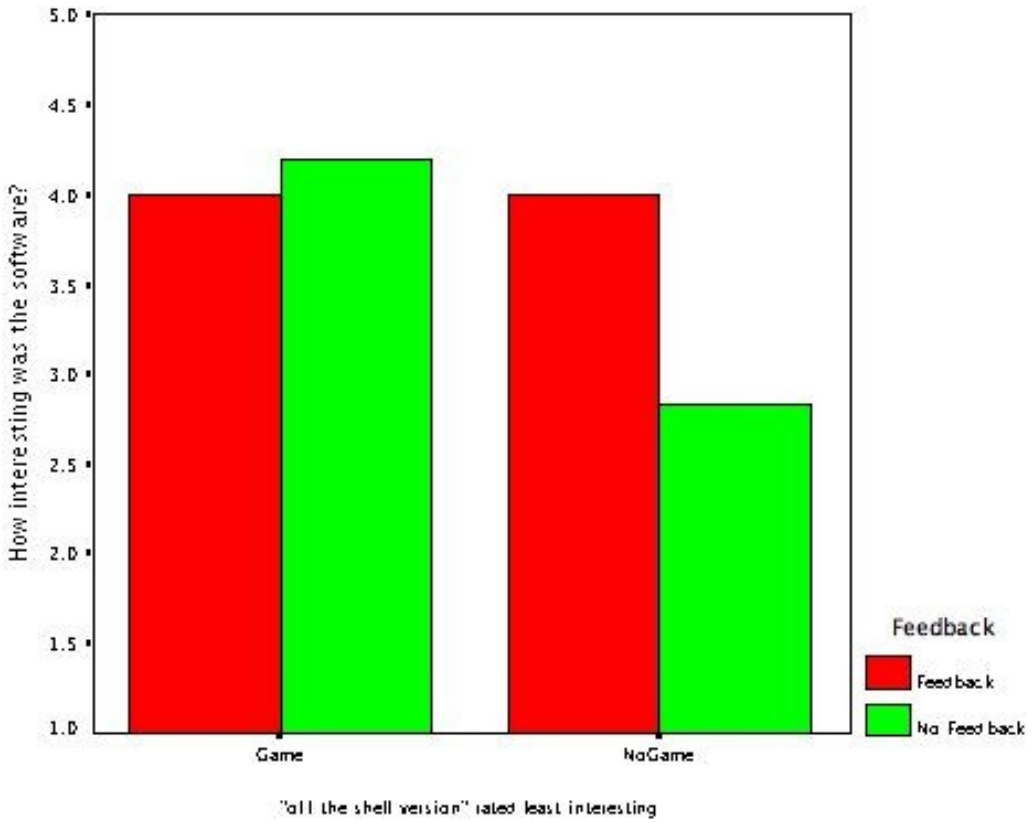
How Interesting Was the Software?



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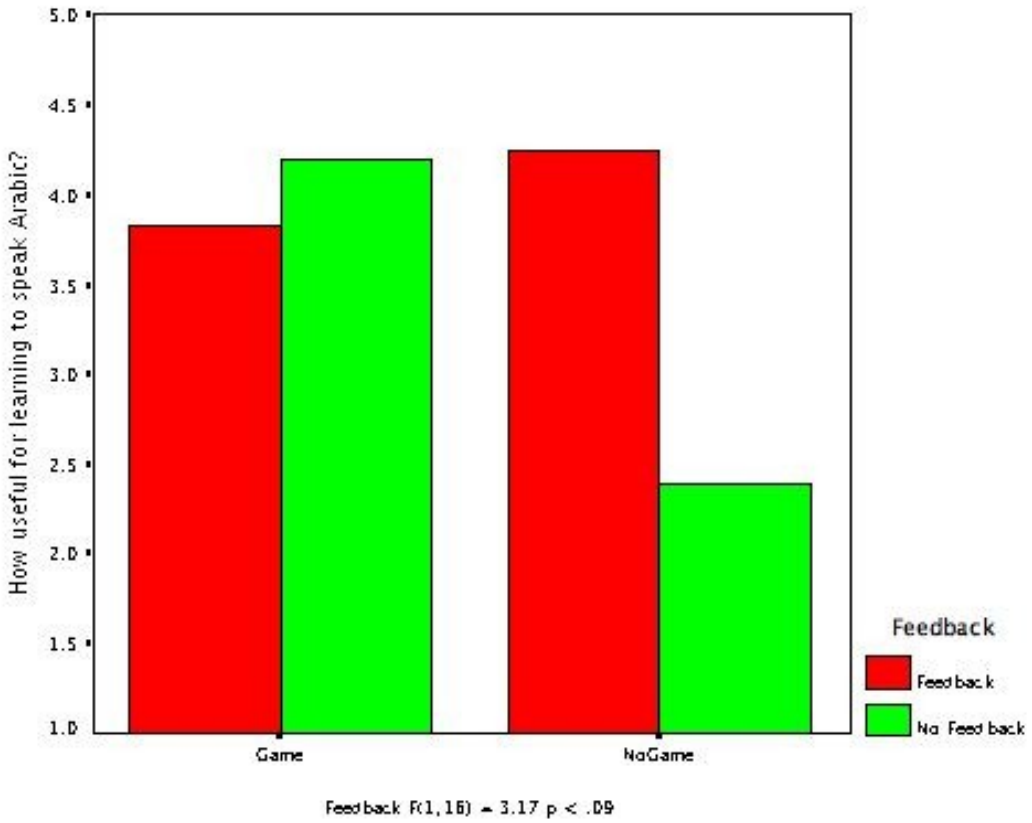
How Useful?



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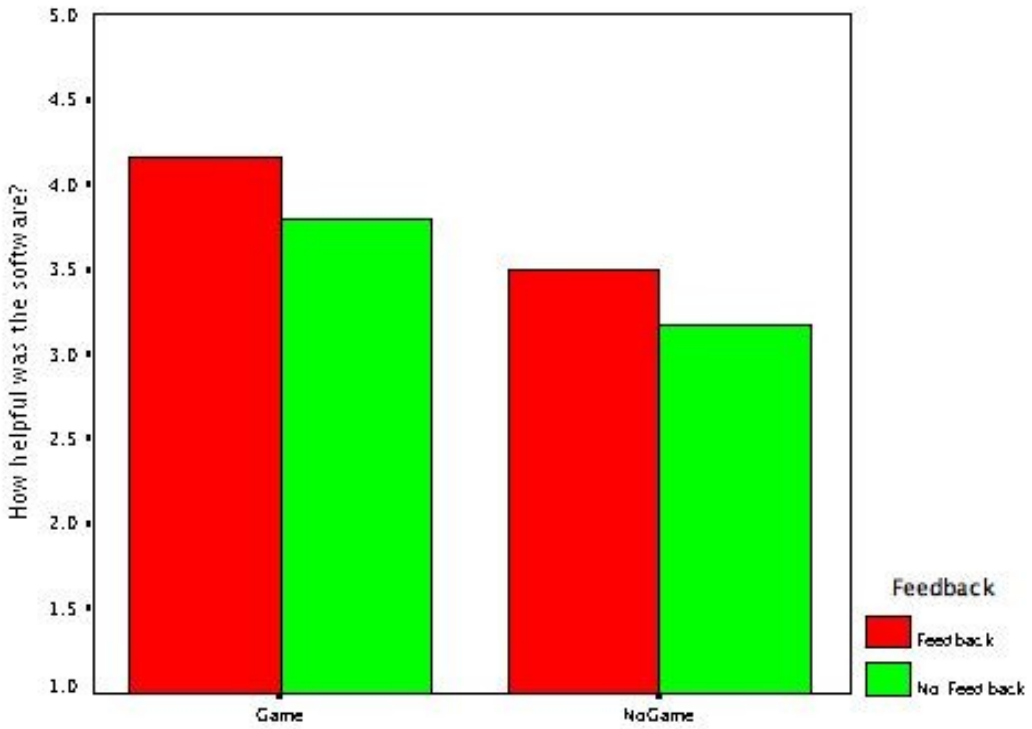
How Helpful?



not significant, but pattern of means is consistent

more interactivity associated with higher ratings for helpfulness

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Approach to Questions

What features of these games are most important for promoting learning?

- Authentic practice
- The right level of challenge
- They highlight issues that trainees might overlook
- Large amounts of practice
- Game scoring aligned with learning gains

How do non-game activities change?

- Learners approach them as a way to improve game performance
- They provide more feedback, opportunities for reflection
- They help promote learner motivation

Can game-based learning transfer to the real world?

- We provide multiple practice situations within game
- We use the simulation as a testing vehicle

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Promoting Good Gameplay

Good games have good gameplay: engaging moment-by-moment interaction (Prensky, 2001)

Dos:

- Support fast, robust interaction
- Build performance feedback into the game

Don’ts:

- Interrupt play with distracting tutorial comments

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Optimize Challenge

Good games are “pleasantly frustrating” (Gee, 2003)

Requirement for AI: to adjust behavior of NPCs so that the difficulty of gameplay is appropriate for the learner

- But still give learner opportunity to fail occasionally, as this motivates and promotes sense of being in control

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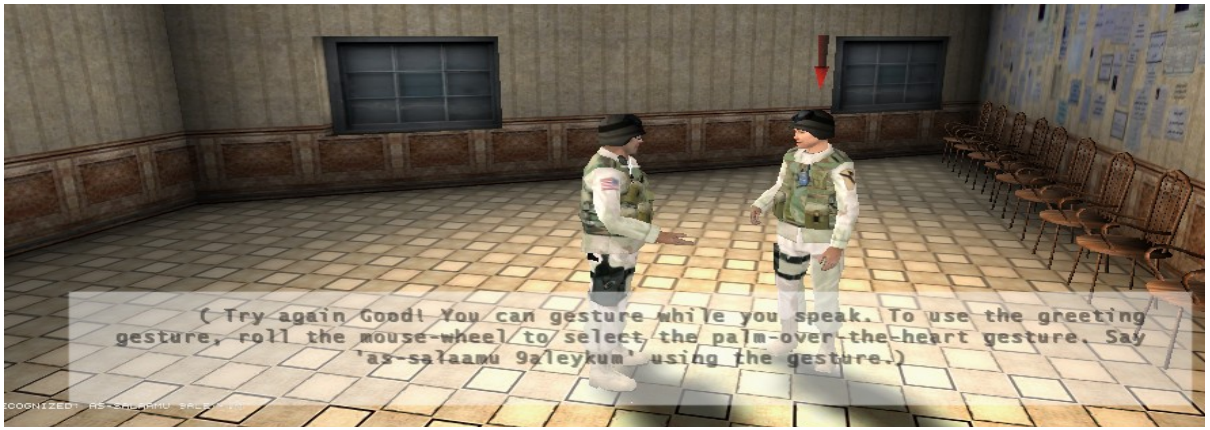
Fishtanks and Sandboxes

Good games often incorporate:

- “fish tanks”: simplified versions of the game
- “sand boxes”: scaffolded levels where it is harder to do something critically wrong

Roles of AI in creating fish tanks and sandboxes:

- Simplified character behavior
- Guide characters who can help learners if they get stuck


(Try again Good! You can gesture while you speak. To use the greeting gesture, roll the mouse-wheel to select the palm-over-the-heart gesture. Say 'as-salaamu 9aleykum' using the gesture.)

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Debriefings and Learning Resources

Tactical LANGUAGE & CULTURE Training System

Game players are naturally motivated to learn to play better

Role of AI:

- To provide learners with skill assessments on demand
- To lead learners to resources that can help them learn better

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Technology Agenda

Improve Tactical Language & Culture runtime platform

- E.g., improved pronunciation error detection

Improve authoring tools

- E.g., enable non-programmers to create complex scenes

Improve trainee assessment and feedback

- E.g., after action reviews, pronunciation assessments

Support wider range of platforms

- E.g., handheld devices, Web

Expand scope of training

- Higher proficiency levels, more culture & task training

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